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10/708,677	03/18/2004	Timothy G. Offerle	81095828FGT1910	2676
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ARTZ & ARTZ, P.C. 28333 TELEGRAPH ROAD, SUITE 250 SOUTHFIELD, MI 48034			SCHWARTZ, CHRISTOPHER P	
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/708,677  
Filing Date: March 18, 2004  
Appellant(s): OFFERLE ET AL.

**MAILED**

**JUN 02 2006**

**GROUP 3600**

\_\_\_\_\_  
Kevin G. Mierzwa  
For Appellant

**SUPPLEMENTAL EXAMINER'S ANSWER**

This is in response to the remand from the Board of Appeals mailed May 18, 2006 . The information disclosure statement filed March 7, 2005 has been considered by the examiner.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,461,357	YOSHIOKA ET AL.	10-1995
5,747,683	GERUM ET AL.	5-1998
6,292,094	DENG ET AL.	9-2001
US 2002/0145663	MIZUSAWA ET AL.	10-2002
6,704,637	HRAZDERA ET AL.	3-2004

**(9) Grounds of Rejection**

1. The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-4,11-27,29,30 rejected under 35 U.S.C. 103(a) as being unpatentable over Deng et al. or Gerum et al. in view of Mizusawa et al..

Regarding claims 1, Deng et al. '094 or Gerum et al. '683 each show a trailer system that "senses" a current position (or hitch angle) of a trailer relative to a vehicle and determines and uses a steering wheel angle to determine a predicted, or desired, position of the trailer based on the current position thereof and the steering wheel angle.

See column 2 lines 42-63 and column 3 lines 1-45 of Deng et al. and Gerum et al. claims 1-7.

Lacking in these references is the camera and display.

Mizusawa et al. Teaches this idea as discussed in column 1 and as clearly seen from figure 1. Such graphical displays (as in a typical vehicles GPS) show a current position of the vehicle but also show a “predicted” or future position of the vehicle (generally indicated by an arrow) based upon a selected travel route.

The ordinary skilled worker in the art at the time of the invention would have found it obvious to have modified either Gerum et al. or Deng et al. with a camera and display system, as taught by Mizusawa et al. simply to assist the driver in backing up when towing a trailer.

The limitations of claims 2-4, as broadly claimed, are fairly suggested by the combined references above.

Regarding claims 11 and 12 these limitations would have been obvious to the ordinary skilled worker in the art to prevent the vehicle and trailer from jack-knifing upon putting the towing vehicle in “reverse”. The signal generated could come from the reverse brake lights.

Regarding claims 13-17 these limitations are fairly taught by the references above.

Regarding claim 18 when the transmission is put into reverse (either by shift lever or push button (which may be on the shift lever – as all are notoriously well known

in the art) a reverse signal is generated. The “transmission controller” could be the shift lever.

Regarding claim 19 this limitation is simply an obvious variation of generating a reverse signal to the reverse brake lights—an indicator indicating the transmission shift lever has been put into reverse.

Regarding claim 20 these limitations are met.

Regarding claim 21, as broadly claimed, these limitations are met with either ‘683 or ‘094 as modified by Mizusawa et al.. Note the hitch angle sensors and controllers which are used in both references and the camera and display system of Mizusawa et al. to aid the driver. Just about any display of the trailer from the camera may be interpreted as a “predicted path”, as broadly claimed, as interpreted by the driver.

Regarding claims 22-27,29 as broadly claimed and as explained above, these limitations are fairly taught by the combined references above.

Regarding claim 30, as best understood, these requirements are met.

5. Claims 5-10,18 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Gerum et al. ‘683 or Deng et al. ‘094 in view of Mizusawa et al as applied to claim1 above, and further in view of Hrazdera et al.

Regarding claims 5-10 although ‘683 or ‘094 lack a brake-steer system such systems are notoriously well known in the art used to reduce the turning radius of the vehicle.

See column 4 lines 14 and 29-30 of Hrazdera et al..

One having ordinary skill in the art at the time of the invention would have found it obvious to have supplied either '094 or '683 with a brake-steer system, as taught by Hrazdera et al. to reduce the turning radius of the vehicle/trailer combination to improve maneuverability or to adapt the device to agricultural type vehicles.

Given a different interpretation, claim 18 could be rejected here as well, since Hrazdera et al. teaches this idea at 6 and 2, and to have modified either '683 or '094 with such a device would have been obvious simply dependent upon the type of vehicle or the environment the vehicle is to be utilized in.

6. Claim 28 rejected under 35 U.S.C. 103(a) as being unpatentable over '094 or '683 as applied to claim 21 above, and further in view of Yoshioka et al.

'094 or '683 lack using an ultrasonic sensor for the detection of a distance to an object.

Yoshioka et al. Teaches this at 27. Note the other devices taught in Yoshioka et al. to assist driver navigation.

One having ordinary skill in the art at the time of the invention would have found it obvious to have modified either '094 or '683 with an ultrasonic sensor to aid in object detection and assist the driver in avoiding a collision with such when backing up the trailer.

#### **(10) Response to Argument**

Appellant's central argument is that neither Deng et al. or Gerum et al. teach a system or method "...that determines a predicted position of the trailer based upon the current position and the steering wheel angle".

The examiner disagrees with appellants. While neither reference may use this specific language, the reference to Deng et al. clearly describes such a method at column 2 lines 42-63 and column 3 lines 1-45. Specifically at column 2 lines 50-51 Deng states "The maximum hitch angle... is a function of the maximum wheel angles...". In column 3 lines 7+ Deng states "The controller system now calculates the maximum allowed front steering wheel angle for achieving the desired hitch angle...". At or around line 33 of column 3 Deng continues with "The system correlates or maps the driver's command (steering wheel angle – refer back to line 7) to the desired hitch angle (i.e. predicted position of the trailer) and continually calculates the difference between the desired (i.e. predicted) and currently measured hitch angle (i.e. current position of the trailer) to .... obtain the desired hitch angle (i.e. predicted position of the trailer).

The reference to Gerum discusses jackknifing in the abstract and provides a system to counter this affect. In order to do this the system must use a current position of the trailer to determine when a predicted or hazardous situation (i.e. jackknife becomes likely) arises. The system clearly uses the steering angle and hitch angle (i.e. current position of the trailer) in it's model as discussed in col. 5 lines 54+ and claims 2 and 5 to determine whether a jackknife condition (i.e. predicted position of the trailer) is occurring. Warning systems for indicating the possibility of such an event to the driver are notoriously well known in the art.

The reference to Mizusawa et al. is relied upon to provide a visual display to the driver during backing of the vehicle to "dock" the hitch thereof with the coupling

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arrangement on a trailer. Such a system may be applied to a wide variety of vehicles (see page 2 paragraph 0035). This system provides a visual display to the driver to aid in the hitch alignment with the coupler –see paragraph 0010 and claim 10. It therefore displays a position of the vehicle with respect to the trailer (i.e. hitch position of the vehicle relative to the coupler on the trailer)

One having ordinary skill in the art would have found it obvious to have modified the camera system as taught by Mizusawa et al. to reflect the techniques of a tow-trailer vehicle system, as taught by either Deng et al. or Gerum, once the vehicles are joined to assist the driver in backing the trailer by displaying the position of the trailer relative to the vehicle.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

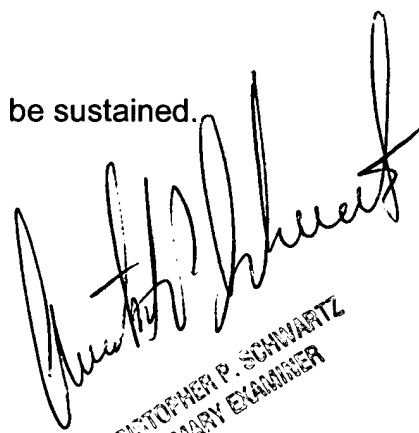
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Conferees:

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Dk *DIL*



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PRIMARY EXAMINER